

# The Role of Dynamic Capabilities in Digital Transformation: Reconstructing Competitive Advantage in Uncertain Environments

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## Abstract:

In today's rapidly changing business environment, digital transformation (DT) has changed from a strategic choice to a necessity for survival. However, many enterprises are still trying to transform their technology investment into sustainable performance improvement. This study explores how dynamic capabilities (DC) can help organizations cope with continuous digital change and maintain competitive advantage in an uncertain environment. From the perspective of DC, we have constructed a conceptual framework to link the process of perception, grasp and reconstruction with the results of digital transformation. Recent research and evidence at the enterprise level show that the success of digital programs depends not only on the adoption of advanced technologies, but also on how management processes integrate these dynamic capabilities into daily practice. This paper believes that these capabilities can enhance the resilience of organizations, enhance strategic response ability and ensure long-term competitiveness, so as to deepen the integration between dynamic capabilities and digital transformation literature.

**Keywords:** Digital Transformation (DT); Dynamic Capabilities (DC); Competitive Advantage; Organizational Resilience; Uncertainty Management

## 1. Introduction

The modern business environment is characterized by rapid technological change, fierce market competition and general uncertainty. In this context, organizations can no longer rely solely on stability; The ability of continuous adaptation has become the key

to survival. The significance of digital transformation (DT) is far more than the application of new technologies - it requires in-depth restructuring of strategy, structure and value creation. Existing research increasingly points out that digital transformation not only affects processes and customer interfaces, but also impacts business models and organizational

logic, emphasizing its systemic impact. However, today's enterprises are facing a continuous challenge: they must maintain operational consistency to continuously create value, while maintaining enough agility to quickly adjust when the external environment changes. To solve this dilemma, a theoretical perspective is needed to clarify how enterprises update their ability to actively manage change. The concept of dynamic capability (DC) proposed by Teece, Pisano and Shuen provides such a perspective. Facts have proved that the traditional strategic framework is inadequate in the rapidly developing environment such as digital ecosystem and intelligent industry<sup>[1]</sup>. Dynamic capability theory emphasizes that sustainable competitiveness depends not only on the possession of valuable resources, but also on the ability of enterprises to perceive emerging opportunities, seize opportunities through coordinated action, and reconfigure the resource base to deal with the new reality. Recent research has begun to combine digital culture with digital transformation, suggesting that the effectiveness of digital initiatives increasingly depends on the ability of organizations to coordinate digital resources and execute updates in their capabilities. Although the world has invested heavily in digital initiatives, the success of the transformation is still elusive - mainly because the static model fails to capture the sustainability and liquidity of digital change<sup>[2][3]</sup>. Current academic research still emphasizes that the micro mechanisms of perception, acquisition, and reconstruction in the digital environment have not been fully explained, especially in the case of continuous transformation rather than discrete changes. The potential mechanism for transforming technology investment into lasting strategic advantage has not been fully clarified<sup>[4]</sup>. Therefore, this paper discusses a core issue: how can dynamic capabilities, especially the ability to perceive, grasp and reconfigure, enable enterprises to integrate and update resources in the process of continuous digital transformation, so as to reshape their competitive advantage? In order to solve this problem, this study reviews the theoretical basis of linking dynamic capabilities with digital transformation, constructs a conceptual framework, and introduces the concept of digital dynamic capabilities (DDC) as a key mechanism to connect dynamic capabilities theory and digital performance results. This approach responds to the call in the literature to clarify how data center micro foundations operate in the context of digital transformation and how they transform technological change into organizational outcomes. This paper further discusses how digital transformation can help enterprises overcome organizational inertia, and outlines the future research agenda in terms of boundary conditions, ecosystem level coordination and emerging technology governance.

This study has contributed to both theory and practice. It links the macro dimension of digital transformation with

the specific micro foundation, and shows how perception, capture and reconstruction work in a digital environment. In addition, this study extends the concept of digital transformation to a multi-dimensional structure to capture how enterprises coordinate technology and organizational resources in practice. By integrating recent discussions and insights on digital capability building, this study further elaborates on how data assets, digital tools, and platform infrastructure can reshape the capability development of enterprises. The study also emphasized the comprehensive influence of management cognition, governance mechanism and cultural factors in promoting digital adaptation. In addition to constructing a conceptual framework, this study also included qualitative analysis of multiple cases based on publicly available evidence from companies such as Amazon, Siemens, and Huawei to strengthen the practical foundation of the proposed dynamic capability mechanism. Taken together, these perspectives contribute to a deeper understanding of how organizations pursue strategic innovation and maintain growth in the ongoing digital disruption<sup>[5]</sup>.

## 2. Theoretical Background

### 2.1 Resource-Based View (RBV) and Its Implications for Digital Transformation

Resource based view (RBV) has long been the cornerstone of strategic management theory. According to this theory, enterprises gain sustainable competitive advantage by possessing valuable, scarce, non imitative and irreplaceable resources (VRIN). Among them, intangible assets (such as organizational practice, brand reputation and accumulated expertise) are usually regarded as the source of lasting value creation. RBV scholars further pointed out that the immobility of these resources, coupled with historical path dependence, has formed a certain degree of „Stickiness“, which makes competitors unable to easily copy the advantages of enterprises<sup>[6]</sup>.

However, the static assumptions behind RBV are increasingly being challenged<sup>[7]</sup>. In the rapidly changing digital market, technology integration and industry boundaries are constantly reshaped, and only having valuable resources is not enough<sup>[8]</sup>. Assets once endowed with competitive advantage will soon lose their importance with the change of external conditions<sup>[9]</sup>. In addition, the resource-based theory has limited insight into how resources evolve, update or restructure over time - in the digital age, continuous technological innovation is crucial, and this lack is particularly important. Therefore, although the resource-based theory provides an important theoretical basis, it must be supplemented by the view of emphasizing the development of adaptability and sustainability<sup>[6]</sup>.

## 2.2 Dynamic Capabilities: Conceptual Foundations and Core Functions

In order to solve the static assumptions embedded in the resource-based view (RBV), the dynamic capability view (DCV) emerged as an adaptive and evolutionary extension<sup>[10]</sup>. Teece and its collaborators describe dynamic capabilities as the ability of enterprises to integrate, build and reconstruct internal and external capabilities to cope with rapidly changing environments. Unlike operational capabilities that emphasize daily efficiency and short-term performance, dynamic capabilities focus on higher-order mechanisms that enable enterprises to update their resource base and maintain long-term competitiveness. Teece’s framework explains these capabilities through three interrelated dimensions: perception, grasping and reconstruction (SSR)<sup>[8]</sup>. Each dimension reflects different aspects of how the organization maintains adaptability in the long term. Perception includes identifying and interpreting emerging opportunities or threats through foresight, digital intel-

ligence and continuous environmental scanning. This function enables organizations to be alert to technological changes, changing customer expectations, and market signals that may reshape industry dynamics. Seizing means mobilizing and coordinating resources to obtain value from perceived opportunities. It usually requires strategic agility, rapid decision-making and cross functional collaboration to translate insights into practical actions. The core of restructuring is to update and transform assets, processes and business models to maintain strategic relevance. By reorganizing resources and reallocating daily work, enterprises can readjust their internal structure and remain competitive in the turbulent environment. These dimensions together constitute a dynamic perspective through which we can better understand the development, adaptation and transformation of organizations in uncertain environments<sup>[10]</sup>. Table 1 shows the core components and strategic achievements of digital dynamic capabilities in the context of digital transformation.

**Table 1. Digital Dynamic Capabilities Framework**

DC Component	Core Function	Digital Routines / Focus	Strategic Outcome in DT
Sensing	Identifying technological and market shifts	Strategic foresight, market intelligence, benchmarking	Early signal detection; strategic option creation <sup>[9]</sup>
Seizing	Acting on opportunities to capture value	Digital strategy, asset orchestration, agile governance	Rapid prototyping, resource deployment, customer responsiveness <sup>[6]</sup>
Reconfiguring	Renewing and transforming resources	Business model redesign, overcoming path dependence	Resilience, sustained advantage, business model innovation <sup>[7]</sup>

Dynamic capability theory emphasizes the importance of organizational agility, which makes up for the limitations of resource-based view. This concept of agility is closely related to how enterprises interpret, design and implement digital transformation plans<sup>[8]</sup>.

## 2.3 Organizational Dimensions of Digital Transformation

Digital transformation (DT) has become one of the most urgent and complex challenges facing contemporary organizations. Its impact is far from simply using digital tools. It requires a fundamental reflection on value proposition, business model and even organizational culture. More and more scholars conceptualize digital transformation as a social technology process. Although digital technology is the key driving factor, the final result depends on social and organizational dynamics. In this sense, a successful transformation depends on the combination of technology investment with strategic intentions, stakeholder expectations and evolving market logic. Previous studies emphasized the multidimensional nature

of digital transformation, covering technological innovation, structural reconstruction and stakeholder participation<sup>[6]</sup>. In order to maintain adaptability, enterprises are often forced to reshape the internal structure, promote cross functional collaboration, and cultivate employees’ digital thinking. Recent studies have also linked digital transformation to broader social goals (such as sustainable development and smart city plans), emphasizing the deep link between digital transformation and socio-economic transformation<sup>[8]</sup>. However, despite the increasing research on digital transformation (DT), how enterprises cultivate lasting digital capabilities has not been fully understood<sup>[9]</sup>. This persistent gap highlights the value of the dynamic capability theory, which provides a useful perspective to explain how enterprises constantly adjust their strategies, structures and resources in the rapid digital transformation<sup>[6]</sup>.

## 2.4 Digital Dynamic Capabilities (DDC) in Driving Digital Transformation

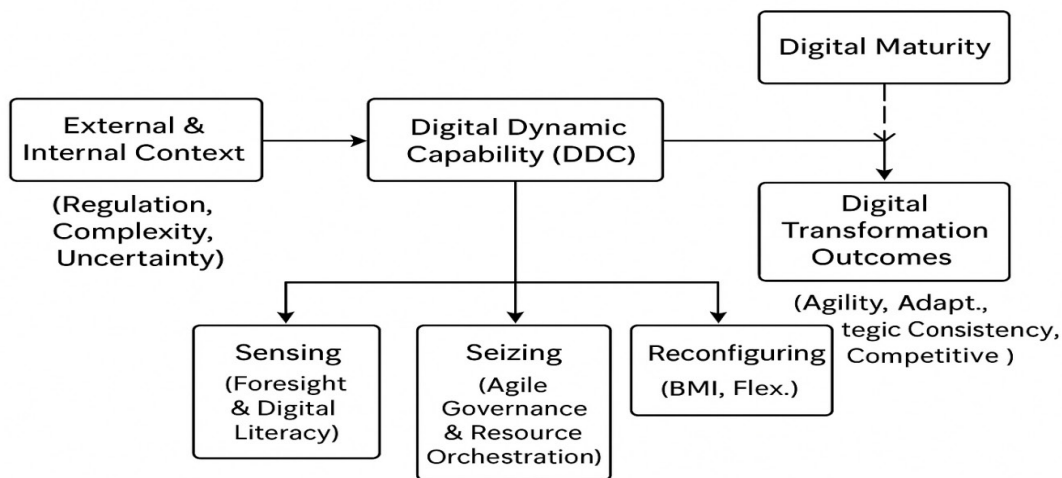
In the cross field of dynamic capability and digital trans-

formation research, scholars put forward the concept of digital dynamic capability (DDC) [10]. The concept covers the organization's high-level ability to coordinate, integrate and update resources in response to continuous digital change. Operational digital capabilities (including IT infrastructure and data analysis) mainly improve efficiency, while DDC plays a more strategic role by maintaining the flexibility of these capabilities and keeping in line with long-term goals.

By developing DDC, enterprises can better predict the trajectory of technology development, identify and utilize new digital opportunities, and reshape business models to maintain competitive advantage. These capabilities can

not only improve operational results, but also enhance the ability of enterprises to carry out strategic renewal and resilience in uncertain environments [6]. However, to achieve this goal, we need to continue to invest in digital systems, cultivate skilled talents, and an innovation culture that supports agility and change.

Therefore, this study positions DDC as the link between dynamic capability theory and digital transformation performance [10]. Focusing on DDC can help us understand how an organization can maintain adaptability and competitiveness in an environment with volatility, uncertainty, complexity and fuzziness (vuca).



**Fig. 1 Theoretical Framework of Digital Dynamic Capability and Digital Transformation Outcomes**

### 3. Research methods

In order to enhance the analytical rigor of this study and ensure that the conceptual framework of Digital Dynamic Capability (DDC) is built on real-world practice rather than pure theoretical abstraction, a qualitative multi case analysis design is adopted in this study. This method is widely used in strategic management and digital transformation research, especially for research that combines theoretical development with context sensitive evidence. The purpose of this method is not to test hypotheses, but to demonstrate how perception, grasping, and reconstruction mechanisms operate in different organizational environments. By examining enterprises at different stages of digital maturity and industry backgrounds, this study enriches and validates the proposed conceptual framework.

#### 3.1 Research Design

This study adopts a qualitative exploratory design, combining conceptual theory construction with case analysis. The purpose is to examine how leading enterprises engage

in sustained digital transformation and place the dynamic capability mechanisms described in the theoretical background section in a specific context. The multi case analysis method does not require the use of confidential data or formal interviews, but relies on validated and publicly available information to provide a balanced empirical basis. This design is consistent with the methodological practices of Long Term Planning, Strategic Management Journal, and Management Research Journal, which typically combine concept development with targeted case evidence to enhance concept clarity and theoretical relevance.

#### 3.2 Case selection

In order to capture differences in digital maturity, industry characteristics, and strategic orientation, we have selected three global companies: Amazon (USA), Siemens (Germany), and Huawei (China). Amazon is a digital native platform company whose business model has been shaped from the outset by data-driven decision-making and large-scale digital architecture. Siemens is a long-standing

leader in industry and manufacturing, undergoing deep digital transformation through Industry 4.0, IoT platforms, and AI enabled industrial solutions. Huawei represents a company with advanced technology in a highly competitive and uncertain environment, emphasizing sustained R&D investment, organizational resilience, and ecosystem based digital capabilities. The selection of these companies is not based on statistical representativeness, but on theoretical applicability, as each company has undergone a widely documented digital transformation process, allowing for a clear observation of its dynamic capability patterns.

### 3.3 Data sources

All case materials are sourced from publicly available and verifiable documents. These documents include annual reports, 10-K forms, shareholder letters, company digital strategy statements, investor day presentations, executive interviews published in authoritative business media, consulting firm white papers, policy documents, and press releases. These materials collectively provide a detailed description of technology investment decisions, organizational restructuring, capability development, platform strategy, and ecosystem level coordination. Using multiple forms of second-hand data can ensure data triangulation and help to more reliably interpret each company's digital transformation trajectory.

### 3.4 Analysis Process

The analysis process is divided into several iterative stages. Firstly, the perception grasp reconstruction framework derived from the theory of dynamic capabilities is applied to organize and interpret the data. This framework provides a structured perspective for identifying early environmental scanning activities, opportunity development processes, and business model or capability update mechanisms. In each case, we reviewed the transformation process in chronological order and narrative style to understand how companies cope with technological changes, market turbulence, and competitive pressures. Subsequently, we conducted cross case comparisons to examine patterns of convergence and divergence. Amazon has demonstrated an advanced digital perception approach that is supported by continuous data collection and AI driven insight generation. Siemens has clearly demonstrated its conscious strategic grasp capability through modular digital architecture and cross business integration. Huawei has demonstrated strong adaptive restructuring capabilities through its organizational structure, R&D investment intensity, and long-term commitment to ecosystem development. The integration of these patterns helps to refine, validate, and enrich the conceptual framework proposed in the next section, ensuring that the proposed

digital dynamic capability mechanism is consistent with observable organizational practices.

## 4. Conceptual Framework: Digital Dynamic Capabilities for Competitive Advantage

The conceptual framework constructed in this section not only draws on existing theoretical perspectives, but also incorporates insights from case analysis. The case models of Amazon, Siemens, and Huawei provide an empirical basis for sensing, grasping, and restructuring mechanisms, and help clarify how digital dynamic capabilities emerge through specific organizational practices. These cases validate and refine the theoretical logic proposed in the following framework.

### 4.1 Integrated Framework of Dynamic Capabilities and Digital Transformation

The conceptual framework developed in this study establishes digital dynamic capability (DDC) as the primary strategic mechanism for achieving success in digital transformation (DT) and maintaining competitive advantage. DDC allows businesses to integrate emerging technology opportunities with long-term strategic goals by improving digital maturity (i.e. the integration of digital tools, expertise and processes within the organization).

From the perspective of dynamic capability, this maturity develops continuously through the continuous cycle of perception, grasp and reconstruction. Companies that are good at perception can find the signals of technology or market changes in the early stage; Enterprises that are good at grasping these insights can turn them into feasible strategic measures; The reconfiguration capability can continuously adjust resources, structure and operation practices. In short, these mechanisms have enhanced the organization's responsiveness to customers, improved adaptability, and enhanced strategic consistency in a volatile environment.

Within this framework, digital maturity is a moderator that links dynamic capabilities to competitive outcomes. Higher maturity enables DDC to more strategically coordinate technology investment and effectively integrate it into all functional departments of the organization. Therefore, the potential value of digital initiatives can be more effectively translated into tangible performance improvements<sup>[7][11][12]</sup>.

### 4.2 Microfoundations of Digital Dynamic Capabilities (DDC)

In order to effectively transform digital dynamic capability (DDC) into practical practice, enterprises must establish a set of clear processes and processes as the basis of op-

eration. These processes constitute the micro mechanism for enterprises to perceive, acquire and reallocate internal resources. In essence, they represent specific means for organizations to continuously update and maintain digital transformation<sup>[13][14]</sup>.

#### 4.2.1 Perception: strategic foresight and digital literacy

The perception dimension involves the ability of an organization to discover and interpret external signals that indicate emerging opportunities or potential threats. In practice, this capability is usually embodied in strategic foresight - an active approach that goes beyond passive trend monitoring, including the construction of reasonable future scenarios. Empirical research shows that many leading enterprises have established specialized foresight departments to predict technological change and support adaptive strategic decisions.

Closely related to this is the concept of hierarchical intelligent ecosystem, in which descriptive, predictive and normative analysis work together. Descriptive analysis explains what has happened, predictive analysis explores what may happen, and normative analysis focuses on determining what actions should be taken. The shift to normative analysis enables enterprises to more directly translate analytical insights into strategic initiatives and decision-making processes.

In addition, the digital literacy of employees and senior management team (TMT) also plays a key role. Executives with a deep understanding of digital technology and confidence to challenge deep-rooted assumptions are more capable of leading digital transformation. Similarly, the integration and behavior consistency within TMT can enhance the organization's ability to handle complex information and respond effectively in uncertain or volatile environments<sup>[13][14][12]</sup>.

#### 4.2.2 Seize the opportunity: agile governance and resource coordination

The dimension of seizing opportunities emphasizes the ability of enterprises to mobilize resources and make strategic decisions in time after discovering new opportunities. The key micro foundation of this capability lies in cross functional digital integration. Through this inte-

gration, the transformation plan can be decomposed into modular projects and supported by coordinated resource allocation. This modular structure ensures that the deployment of innovation is consistent with the broader strategic priorities of the organization.

It is also important to establish agile data governance and integrate adaptability into daily decision-making. Unlike the traditional top-down governance system, this approach places governance responsibilities within the digital team, allowing standards to evolve and respond quickly. In this way, enterprises can alleviate the internal contradiction between control and flexibility, and transform governance from a restrictive framework to a catalyst for innovation and strategic agility<sup>[14][15]</sup>.

#### 4.2.3 Reconstruction: business model innovation and coordination flexibility

The reconstruction dimension refers to the continuous updating of organizational structure and business model. The core of this process is business model innovation (BMI) - a systematic redesign of the way enterprises create and obtain value. BMI is the key bridge between digital transformation and long-term competitiveness. Its success depends not only on technology investment, but also on the integration of digital tools, analytical capabilities and reasonable management judgment<sup>[16]</sup>.

Another important aspect of reconfiguration is to overcome path dependence and organizational inertia. Depending on the speed and uncertainty of technological change, enterprises may choose different transformation trajectories - from substitution, gradual evolution to comprehensive innovation. At the leadership level, dynamic management capability (DMC) is crucial, which reflects the ability of senior managers to make strategic decisions and guide cultural adaptation<sup>[15]</sup>. By embedding these mechanisms, organizations can constantly reshape their business models, enhance coordination flexibility, and maintain resilience in the continuous environmental turbulence. Table 2 summarizes the three core components of digital dynamic capabilities and their corresponding micro foundations and mechanisms for the success of digital transformation.

**Table 2. Components and Microfoundations of Digital Dynamic Capabilities**

in Digital Transformation

DC Component	Microfoundation (Routine/Skill)	Mechanism for DT Success	Key Contribution / Reference
Sensing	Strategic foresight & prescriptive analytics	Transforms sensing from reactive scanning to strategic shaping	[13]
	Managerial digital literacy & TMT integration	Enhances readiness; reduces internal barriers	[14][12]
Seizing	Agile data governance & distributed standards	Balances execution speed with compliance	[14][15]

	Digital asset orchestration	Aligns innovation resources with strategy	[12]
Reconfiguring	Business model innovation (BMI)	Links DT with sustainable advantage	[16]
	Coordination flexibility capabilities (CFC)	Overcomes inertia and promotes renewal	[15]

The integration of these practices enables the dynamic capability framework to play an effective role in the digital environment, and provides a specific way for enterprises to transform abstract theoretical insights into operational strategic initiatives.

## 5. Integrated Discussion and Future Research Directions

### 5.1 Digital Dynamic Capabilities as Engines of Continuous Renewal

This study focuses on how Digital Dynamic Capability (DDC) serves as a continuous process that connects perception, grasp, and reconstruction activities across different organizational contexts. Cross case analysis shows that regardless of the type of enterprise or industry, dynamic capabilities can enable organizations to adapt and update in rapidly changing digital environments. In the digital age, competitive advantage increasingly relies not only on valuable resources, but also on the ability to reshape assets, practices, and business models. Therefore, DDC promotes enterprises to shift from passive adaptation to actively shaping technology and market patterns. Empirical research further indicates that this ability enhances agility and responsiveness by achieving coordinated resource restructuring, enabling enterprises to anticipate digital disruption and transform it into strategic opportunities<sup>[17][18]</sup>.

### 5.2 Breaking Organizational Inertia Through Strategic Reconfiguration

One major obstacle to digital transformation is organizational inertia. Established conventions, past successful experiences, and structural rigidity often slow down change and strengthen path dependence. Traditional strategic frameworks provide limited insights into overcoming these challenges in rapidly evolving digital ecosystems. In contrast, the ability to refactor helps companies continuously adjust their resource base, align priorities with changing environments, and avoid strategic lock-in. Enterprises that integrate the update process into their operations typically exhibit stronger resilience, being able to explore new opportunities while leveraging existing strengths<sup>[19][17][20]</sup>.

### 5.3 Leadership, Culture, and the Orchestration of Digital Capabilities

The effectiveness of data-driven decision-making (DDD) also depends on leadership and corporate culture. Digital leaders must articulate a coherent strategic vision, coordinate cross functional resources, and guide organizations in addressing technological and environmental uncertainties. In addition to technical expertise, leaders also need to possess the ability to challenge deeply ingrained patterns and promote organizational learning. When leadership is combined with a supportive culture that values innovation, collaboration, and data-driven decision-making, it can significantly accelerate digital transformation. Empirical research has shown that organizations with a broad culture of innovation and empowerment practices are more effective in responding to disruptive change<sup>[21][22]</sup>. The investment of management in digital transformation and control (DDC) can further strengthen the structural and cultural foundation required for the long-term competitiveness of enterprises, enabling them to maintain adaptability in turbulent environments.

### 5.4 Contextual Contingencies and the Expansion Toward Ecosystem Capabilities

Future research should deepen our understanding of the most effective operating conditions for Dynamic Capability Building (DDC). The performance of the DDC mechanism is affected by factors such as enterprise size, maturity, regulatory pressure, technological changes, and market uncertainty. Mature enterprises may face rigidity issues related to inertia and scale, while digital native enterprises face resource constraints and structural instability. Comparative empirical research is needed to explore whether similar DDC configurations can produce consistent results in such different contexts<sup>[24][25]</sup>.

The rise of platform ecosystems has expanded the study of dynamic capabilities beyond the boundaries of enterprises. As enterprises rely more and more on the Internet, new capabilities such as resource coordination, ecosystem maintenance and ecosystem level reconstruction become critical. These capabilities support the coordination of partners, conflict resolution, shared resource governance, and strategic reshaping of ecosystem relationships. The diversification of ecosystems further enables enterprises to expand into adjacent fields through technological integra-

tion and innovation. These ecosystem oriented capabilities collectively emphasize collaborative innovation and extend traditional dynamic capability frameworks to a wider range of multi organizational environments <sup>[24]</sup>.

## 5.5 Responsible AI Governance and Future Longitudinal Research Pathways

As artificial intelligence plays a central role in digital transformation, governance and ethical management are becoming increasingly prominent and critical issues. Organizations must ensure accountability, transparency, and fairness when deploying artificial intelligence systems. Future research should explore how dynamic capabilities related to artificial intelligence, such as AI literacy, technological maturity, and ethical orientation, can support adaptive and responsible governance structures <sup>[24]</sup> <sup>[26]</sup>. Responsible artificial intelligence governance itself can be seen as a dynamic capability that includes guidelines, safeguards, and empowerment mechanisms to translate ethical principles into operational processes. These mechanisms help reduce moral and reputational risks while supporting long-term value creation <sup>[26]</sup> <sup>[17]</sup>.

Finally, future research should adopt longitudinal research methods to capture the evolution of dynamic capabilities and their causal pathways. To understand how specific practices, such as business model reshaping or forward-looking strategies, can be translated into sustainable performance, long-term, process oriented evidence is needed. This type of research will improve the theoretical accuracy of the dynamic capability framework and enhance its management relevance <sup>[18]</sup> <sup>[25]</sup>.

## 6. Conclusion

### 6.1 Summary of Key Insights

This paper emphasizes the core role of dynamic capabilities (DC) in managing the inherent volatility of digital transformation (DT). Dynamic capability view (DCV) provides a theoretical basis for balancing operational stability and strategic renewal. The success of digital transformation depends on how the organization activates digital dynamic capabilities (DDC) through the micro foundation and transforms these abstract capabilities into concrete practice.

Perception involves using foresight and normative analysis to predict and shape change; Capture focuses on realizing emerging value through agile governance and the choreography of digital assets; Reconstruction requires continuous updating through business model innovation. These mechanisms help enterprises overcome inertia, strategically embed new technologies, and maintain competitive advantage by combining resilience and flexibility.

### 6.2 Theoretical and Managerial Contributions

From a theoretical point of view, this study promotes the integration of dynamic capabilities and digital transformation research by providing a micro basic framework of digital dynamic capabilities (DDC). The framework describes how perception, capture and reconstruction mechanisms work together to transform digital investment into sustained organizational performance.

From a practical point of view, the framework provides practical guidance for managers. By adopting practices such as agile data governance, cross functional collaboration and forward-looking intelligence, executives can improve coordination, promote innovation and enhance organizational adaptability. Thus, DDC has become a strategic blueprint for transforming digital turbulence into long-term opportunities.

### 6.3 Limitations and Future Research Opportunities

This study is still in the conceptual stage, drawing on the integration of existing literature. The proposed micro foundation of digital transformation needs to be empirically tested in different industries and backgrounds. Given the complexity of digital transformation, the relative importance of specific practices may vary depending on factors such as organizational size, regulatory environment and digital maturity. Longitudinal and comparative studies can provide more in-depth insights into the evolution and interaction of digital transformation mechanisms in practice.

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